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(54) PRODUCTION OF SILICON DIOXIDE GRANULAR MATERIAL

(57) Abstract:

PROBLEM TO BE SOLVED: To obtain a SiO₂ granular material which substantially consists of uniform spherical particles, which has high purity and which is homogeneous and dense by controlling a stirring operation in such a manner that granular aggregates are produced from a homogeneous liquid phase of a silicic acid dispersion liquid having a specified concn. range and solid content.

SOLUTION: A silicic acid is dispersed in a liquid and the dispersion liquid is continuously stirred in a stirring tank to produce a homogeneous liquid phase.

Granular aggregates are formed while water content is gradually removed from the dispersion liquid. Then the granular aggregates are dried and calcined to produce a SiO₂ granular material. In this method, the stirring operation is controlled in such a manner that the granular aggregates grow from the homogeneous liquid phase of the dispersion liquid having 65 wt.% to 80 wt.% solid content. Further, the stirring operation is preferably controlled in such a manner that granular aggregates grow from the dispersion liquid having 75 to 80 wt.% solid content. A stirring tank equipped with a vertical center axis and a stirrer rotating around the axis is preferably used. Further, the stirring tank is preferably rotated in the opposite direction to the stirrer.

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